Treasurer Rappleye read a letter of appreciation from F. E. Fox returning the unused AAAS grant of $170 for purchasing equipment that he fortunately was able to borrow for the completion of his project.

The meeting was adjourned at 9:35 p.m.

F. M. Defandorf, *Secretary.*

Obituaries

Thomas Wayland Vaughan, geologist, paleontologist, and oceanographer, died January 16, 1952, at the age of 81. He was born in Jonesville, Tex., on September 20, 1870. His undergraduate training was obtained at Tulane University, where he chose to major in physical science. At Tulane he took his first course in geology along with generous portions of physics, mathematics, and chemistry, and received a B.S. degree in 1889 at the age of 18 years. From 1889 to 1892 he was instructor in chemistry and physics at Mount Lebanon College in Louisiana, then went to Harvard, where he received an A.B. degree in one year, a master's degree in another, and his doctorate in 1903. Meanwhile, in 1894, he had joined the U. S. Geological Survey as assistant geologist. He continued in the Survey's employ for many years, becoming geologist-in-charge of Coastal Plains investigations in 1907, at the age of 37 years. In 1903 he was appointed custodian of the madreporarian corals in the U. S. National Museum. In 1924 he gave up governmental work in Washington and went to La Jolla, Calif., as professor of oceanography at the University of California and director of its Scripps Institution of Oceanography. In this position he was very active for a dozen years and largely through his efforts Scripps evolved from a seaside biological laboratory to the leading oceanographic institution of the world. During all these years he was generous in giving assistance to others, and he had the foresight to train successors in the many fields that claimed his attention.

Wayland Vaughan had every reason to be proud of his accomplishments and of the recognition that followed. No attempt will be made to enumerate the societies to which he was elected, both in this country and abroad, the high offices that he held in many of them, or to list the medals conferred upon him. Among others, one foreign government awarded a decoration, and three universities, two in this country and one in Canada, conferred honorary doctor's degrees. One of his last honors came less than a year ago when, with impressive ceremonies, the Scripps Institution named its newest and finest building for him. Additional honors awaited him had he lived, as several volumes on geology and ecology now nearing publication have been dedicated to him.

Dr. Vaughan commanded the respect and admiration due a talented and prodigious worker who was able to pursue his career actively for a period of 60 years and to write several hundred scientific papers. This, however, is only a part of the story. He was truly unique in his ability to shift his interest and enter related or entirely new fields of investigation. Starting with investigations of the geology of the Atlantic and Gulf Coastal Plains, he expanded his studies into eastern Mexico, the West Indies, and Panama. He became the leading authority on the Mesozoic, Cenozoic, and Recent corals of these areas including their ecology, paleoecology, and reef-building characteristics. At a comparatively late date—about 1923, when he was 54 years old—he undertook the study of an even more difficult group, the larger Foraminifera, and wrote monographic papers on these organisms. At about this same time he moved to the west coast and turned to oceanography. To this field he brought a knowledge of marine organisms and marine sediments; but it also called for a broad knowledge of physical oceanography, and he had to review and supplement his early studies, particularly in the field of mathematics. During a trip around the world in 1932–33, to survey oceanographic facilities for the National Academy of Sciences, he became interested in oriental art, a study that took up much of his spare time in the years that followed. He pursued it so assiduously that in California he was in even greater demand as a lecturer on oriental art than in his main fields of geology and oceanography. In 1934, at the age of 64 years, while recovering from a severe illness, he undertook the study of the Japanese language and actually attained considerable proficiency in this field. When he reached 65 he was automatically retired as Director of Scripps, but he could have remained at the

Institution as Professor of Oceanography. He chose, instead, to return to Washington to resume his paleontological studies at the U. S. National Museum. In 1947, he became partly blind after a severe attack of pneumonia. This ended his scientific work, but until his last illness he maintained his interest in the scientific work of others and in the workers themselves. He was indeed an outstanding scientist, and this brief summary does not do justice to his tremendous productivity.

H. S. Ladd.

The passing of Dr. Walter T. Swingle on January 19 last was a very heavy loss to the botanical and agricultural sciences. There are, of course, hundreds of distinguished workers in these fields in the United States, but the writer can think of no one with precisely the rare combination of a brilliant and highly original mind with extensive and profound knowledge, that made Swingle preeminent in these fields. To these gifts were added an unfailing kindliness and willingness to share with others his great store of learning and experience.

Born in Canaan, Pa., in 1871, his boyhood was spent in Kansas where he entered the State Agricultural College at Manhattan, receiving the degrees of B.Sc. and M.Sc., in 1890 and 1896, respectively. His alma mater honored him with the degree of D.Sc. in 1922.

He was called to the U. S. Department of Agriculture at the early age of 20 and remained an active member of the Department until his retirement in 1941. In 1895–96 and again in 1898 he was in Germany, studying at the Universities of Bonn and Leipzig. The opportunity of working in the laboratory of so eminent a botanist as Professor Strasburger, contributed greatly to his knowledge of cytology, one of the many fields in which he gained distinction. He was the first to prove the existence of centrosomes in plant cells.

During his sojourn in Germany, as previously at Manhattan and afterward in the Department of Agriculture, Swingle was closely associated with David Fairchild, an association continued, with mutual benefit, to the end of Swingle's life.

Upon his return to Washington he became engrossed in the development of the Bureau of Plant Industry, which owes much of its usefulness to his efforts. Many projects that are still pursued actively in the Bureau originated in the fertile brain of Swingle.

Agricultural exploration soon engaged his attention and this work took him to French North Africa and other parts of the Mediterranean region, and later to China, Japan, the Philippines and Brazil. Two of the outstanding results of these explorations were the first successful introduction of the caprifig wasp, upon which the prosperity of the Smyrna-type fig industry in California largely depends, and the establishment of a very flourishing date industry in that state and Arizona. His papers on date-growing in Algeria and on the caprifig are two of his most important publications.

With the late Dr. H. H. Webber, he spent several years in Florida investigating the citrus industry and making hundreds of hybrids. Perhaps the finest of these is the tangelo, which resulted from a cross between the tangerine and the grapefruit. This work led him into exhaustive investigations of the taxonomy of the orange subfamily. Some two dozen papers were published on this subject, and several new genera were described.

The establishment of the American-Egyptian cotton industry in Arizona, in which Dr. Swingle collaborated with other members of the Bureau of Plant Industry, was another of the projects to which his fertility of ideas contributed most effectively.

In collaboration with Dr. Lyman Briggs, he perfected the ultraviolet microscope, making it a most useful tool in botanical research.

Dr. Swingle was a fellow and life member of the American Association for the Advancement of Science, one of the founders of the Washington Academy of Sciences, and a member of the Washington Academy of Medicine, Botanical Society of America, and the Philadelphia Academy of Sciences; also an honorary life member of the National Geographic Society and a corresponding member of the Académie d'Agriculture de France. In 1926 he represented the U. S. Government and the National Research Council at the third Pan Pacific Science Congress, in Tokyo.

He married, in 1915, Maude Kellerman, herself the daughter of a distinguished botanist and the sister of a former associate chief of the Bureau of Plant Industry. She, and their two sons and two daughters, survive him.

T. H. Kearney.